

**Segment Developer's Guide
Server COE Web Help Data
(ServerCOEWEBHelpDATA)
Version 1.0.0.1 (HP-UX 10.20)**

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Preface

The following conventions are used in this document:

Bold	Used for information that is typed, pressed, or selected in executables and instructions. For example, select connect to host .
<i>Italics</i>	Used for file names, directories, scripts, commands, user IDs, document names, and Bibliography references; and any unusual computerese the first time it is used in text.
<u>Underline</u>	Used for emphasis.
Arrows <>	Used to identify keys on the keyboard. For example <Return>.
“Quotation Marks”	Used to identify informal, computer-generated queries and reports, or coined names; and to clarify a term when it appears for the first time. For example “Data-Generation Report.”
Courier Font	Used to denote anything as it appears on the screen or command lines. For example <code>tar xvf dev/rmt/3mm</code> .
Capitalization	Used to identify keys, screen icons, screen buttons, field, and menu names.

1. Developer's Guide

1.1 Introduction

The *COE Web Help Developer's Guide* is designed to provide instruction to developers of Defense Information Infrastructure (DII) Common Operating Environment (COE) mission applications on how to integrate Web-based help documents into a particular mission application's operating environment. This document provides guidelines on how to design Web help data segments as well as how to invoke a Web browser from within an application to provide the most efficient and compliant Web-based help solution for mission-specific capabilities.

1.1.1 Scope

The information provided in this document applies to both Web-based and Motif applications. However, the accompanying COE Web Help sample segments have been designed to illustrate an implementation approach used for Motif applications. It is recommended that the source code provided in these segments be referenced while reading this document to obtain a complete understanding of the issues outlined by this guideline.

1.1.2 Assumptions

It is assumed that a DII COE-compliant Web browser (e.g., Netscape Web Browser) will be used as the viewer for COE Web Help documents. (The COE Web Help sample application requires the DII COE Netscape Web Browser segment, V3.0.0.x).

It is assumed that a DII COE-compliant Web server (i.e., Netsite Web Server) will be used to host Web help documents in the server-based implementation of COE Web Help (the Server COE Web Help sample application requires the DII COE Netsite Web Server segment, V1.0.0.2/1.12).

The guidelines presented in this document comply with or augment existing DII COE design, programming, and run-time specifications and standards. It is assumed that the users of this guide are familiar with and have implemented their applications in accordance with these specifications and standards. Therefore, the guidelines herein will only present information specific to the integration and access of Web help documents in a DII COE environment. This document will not discuss the following:

- C Web document formatting (e.g., use of HTML tags)
- C Web document design
- C How to design a data segment
- C How to design a software segment

1.2 DII COE Web Help Architecture

A DII COE Web-based help solution comprises both a data and a software segment. The data segment contains the actual Web help source files pertaining to a specific mission application while the software segment contains source and/or executable code of the mission application itself. This document presents two implementation approaches for Web-based help. Each approach describes where the Web help source files are logically located in a DII COE environment and how they are to be accessed. These approaches and procedures for implementing them are described in this document.

1.3 DII COE Web Help Access

A key aspect of COE Web Help is its use of Web browser to access and display help information for a particular application. It is important to note that, regardless of how your mission application has been implemented (e.g., Web-based application, Motif-based application, etc.) the interface to help information remains the same. This means that whenever help information is requested, a new browser window will be displayed containing the associated help information.

1.4 Sample Segments

Four sample segments have been provided with this document to help illustrate how to implement two distinct Web help solutions.

COE Web Help Software (COEWEBHelpSW) segment—sample software segment for a segment-based Web Help solution.

COE Web Help Data (COEWEBHelpDATA) segment—sample data segment for a segment-based Web Help solution.

Server COE Web Help (Software) (ServerCOEWEBHelpSW) segment—sample software segment for a server-based Web Help solution.

Server COE Web Help (Data) (ServerCOEWEBHelpDATA) segment—sample data segment for a server-based Web Help solution

The COEWEBHelpSW and COEWEBHelpDATA segments are associated segments designed to illustrate a segment-based Web Help solution. These segments should be installed together, with the software segment being installed first.

The ServerCOEWEBHelpSW and the ServerCOEWEBHelpDATA segments are associated segments designed to illustrate a server-based Web Help solution. These segments may be

installed in any order. However, it is important to note that a Web server must exist on the installation machine before the ServerCOEWEBHelpDATA segment can be installed.

NOTE: All examples presented in this document were taken from these sample segments. Refer to these segments as needed.

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2. Segment-Based COE Web Help Documents

This section describes the implementation of segment-based COE Web help documents.

2.1 Design and Implementation

2.1.1 The Data Segment

Segment-based Web help documents are help documents contained in a data segment that resides on the same machine as the software segment to which it relates. It is understood that this data segment is managed and accessed solely by that software segment. Therefore, a data segment of type “segment” should be used for this approach.

When designing your COE Web help data segment, you will need to do the following:

Step 1: Place all mission-specific Web help source files into the */data* sub-directory of your data segment.

Step 2: In your data segment’s *SegName* file, use the \$SEGMENT keyword to specify the “affected software segment.” That is, the software segment to which your help documents apply (see *SegName* in the */SegDescrip* sub-directory of your data segment). For example:

```
$SEGMENT:COE Web Help Software Segment:WHSW:/h/COEWEBHelpSW
```

Step 3: Use the Data descriptor in the *SegInfo* file to specify where your data files are to be logically loaded and their scope. In the case of Segment-based Web help documents, the Data descriptor should be specified as follows:

```
$SEGMENT:<segname>:prefix:<home directory>
```

For example:

```
$SEGMENT:COE Web Help Software Segment:WHSW:/h/COEWEBHelpSW
```

NOTE: The *segname* and *prefix* must match the name given in the affected segment’s *SegName* descriptor. (See the *SegInfo* file in the */SegDescrip* sub-directory of your data segment.)

Step 4: Finish developing your data segment and use the appropriate DII COE development tools to place your data segment onto an installation media.

2.1.2 The Software Segment

Before a specific mission application can access segment-based Web help documents, three things must occur:

- 1) The mission application must be made aware of the location of the associated Web help files.
- 2) The mission application must be modified to launch the DII COE Web browser and access these files.
- 3) The mission application must be segmented in accordance with the DII COE Integration and Runtime Specifications (I&RTS).

2.1.2.1 Help File Location

For segment-based Web help, help files will be “logically” located in the associated software segment’s */data* directory after both software and data segments have been installed. Therefore, the logical location for these help files can be defined as:

Software Segment HOME DIR/data/Data Segment directory name/data

For example: */h/COEWEBHelpSW/data/COEWEBHelpDATA/data*

2.1.2.2 Launching a Browser and Accessing Help Files

For users of your mission application to obtain access to associated segment-based web help documents, you will need to do the following:

Step 1: Establish an interface to help information via a button or menu item.

Step 2: Verify the logical location and/or existence of the Web help document to be accessed via this interface. (See the *WHSW_call_COEWEBHelp* script in the */bin* sub-directory of the COEWEBHelpSW segment).

NOTE: In the case of the sample COEWEBHelpSW segment, verifying a help file's logical location and existence is handled by a separate shell script for the sake of readability. However, you may use any DII COE compliant method to handle file verification.

Step 3: Associate the help button or menu item with a call to the web browser. This call should contain the "file:/" URL for the home page of the associated help documents. In addition, the call to the browser should take into consideration whether or not an existing Netscape process is already running and launch Netscape accordingly.

This is important because the Netscape application may lock and/or other errors may occur when attempting to run more than one Netscape executable at a time. A way to handle this has been illustrated in the *WHSW_call_COEWEBHelp* script in the COEWEBHelpSW segment. This routine uses a command similar to the following to invoke the web browser:

```
<Segment HOME DIR for Web Browser>/BIN/Netscape -remote  
"openURL(<URL>, new())" || ( <Segment HOME DIR for Web  
Browser>/BIN/Netscape <URL> & )
```

where

- The "remote" option executes a command with an existing Netscape process.
- the "new()" option brings up a new Netscape window
- the "openURL" directive instructs Netscape to open particular document specified by <URL>
- <URL> is the URL for the home page of the web help documentation for your mission application. For a segment-based web help document, the URL would be as follows:

*file:/Software Segment HOME DIR/data/Data Segment directory
name/data/Name of Help Home Page*

For example:

```
[~korn shell example] /h/COE/Comp/WEBBr/BIN/Netscape -remote  
"openURL('file:/h/COEWEBHelpSW/data/COEWEBHelpDATA/data/COEWEBHel  
p.html', new())" || (/h/COE/Comp/WEBBr/BIN/Netscape  
'file:/h/COEWEBHelpSW/data/COEWEBHelpDATA/data/COEWEBHelp.html'
```

When this korn shell command is invoked, the “||” symbol is used to determine which call to Netscape should be executed: If Netscape is already running, the call to Netscape that appears before the “||” symbol is used to bring up a new Netscape window containing the Web Help home page information. However, if Netscape is not running at the time the command is invoked, the call to Netscape that appears after the “||” is used to launch Netscape.

It is important to use care when accessing local files using Netscape’s “remote” option. Since this option is capable of executing Netscape commands using existing Netscape processes that are not running local to the machine where your local help files reside, errors may occur when trying to access these files in this way. To avoid this, make sure that your code checks whether or not a Netscape process is already running in the user’s environment and uses the “remote” option only if a Netscape process has been found. See the *WHSW_call_COEWEBHelp* script for an example of how this can be done.

Step 4: Create an empty */data* sub-directory under the segment home directory for your software segment

NOTE: For segment-based Web Help, no additional modification to your software segment should be required.

Step 5: After completing the development of your software segment, use the appropriate DII COE development tools to place your segment onto an installation media.

2.2 Installation

After developing your data and software segments, you will install them on a DII COE platform (see the *Installation Procedures* for the COEWEBHelpSW segment). It is important to install the software segment first since the data segment needs to locate this segment before it can be installed.

Once both the data and software segments are installed, you will notice that the COEInstaller has logically placed your web help data file(s) in the following sub-directory:

Software Segment HOME DIR/data/Data Segment directory name/data

For example:

/h/COEWEBHelpSW/data/COEWEBHelpDATA/data

where the lowest level */data* sub-directory is a symbolic link to *Data Segment directory name/data*.

For example:

/h/COEWEBHelpDATA/data

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3. Server-Based COE Web Help Documents

A server-based Web Help implementation differs from a segment-based Web Help implementation in that, unlike the segment-based Web Help implementation, the associated data segment is logically associated with a Web server segment, and not with the mission application software segment to which the data segment help files correspond. Therefore, several issues must be addressed for a server-based Web Help implementation to ensure that help files are properly installed and accessed by the associated mission application. These issues are described in this section.

3.1 Design & Implementation

3.1.1 The Data Segment

Server-based Web help documents are contained in a data segment which resides on the same machine as the Web server responsible for hosting these documents. Therefore, it is the Web server segment that is considered to be the “affected” segment of the data segment as opposed to the segment containing the mission application, which accesses these files. As in the segment-based Web Help approach, a data segment of type “segment” should be used.

With this in mind, complete the following steps when designing your data segment:

Step 1: Place all mission-specific Web help source files into the */data* sub-directory of your data segment.

Step 2: In your data segment’s *SegName* file, use the `$SEGMENT` keyword to specify the “affected software segment.” In this case, the affected software segment will be the Web server that will be hosting these help files. (See *SegName* in the */SegDescrip* sub-directory of your data segment.) For example:

\$SEGMENT:Netsite Web Server:WEBSv:/h/COE/Comp/WEBSv

Step 3: Use the Data descriptor in the *SegInfo* file, to specify the where your data files are to be logically loaded and their scope. In the case of server-based Web help documents, the Data descriptor should be specified as follows:

\$SEGMENT:segname of Web server:prefix:home directory

For example:

\$SEGMENT:Netsite Web Server:WEBSv:/h/COE/Comp/WEBSv

NOTE: The *segname* and *prefix* must match the name given in the affected segment's *SegName* descriptor. (See the *SegInfo* file in the */SegDescrip* sub-directory of your data segment.)

Step 4: Once the data segment has been installed on a Web server machine, it will be necessary to modify the web server's configuration so that it can located and host the newly installed data files properly. To do this, a new "URL map entry" must be added to the web server's *obj.conf* file. This entry can be added either automatically, by adding the appropriate [Community] descriptor to your data segment's *SegInfo* file; or manually, after the data segment has been installed. Since all server-based Web Help documents are to be accessed using the URL:

http://web server name/mission app prefix/HELP/mission app help home page

The entry to be added to the web servers *obj.conf* file is as follows (see Subsection 3.1.2):

```
NameTrans from="<segment prefix>/HELP" fn="pfx2dir"  
dir="<directory path of data files>"
```

where

- The *segment prefix* is the segment prefix of the mission application segment to which these help files correspond.
- *directory path of data files* is the full directory path location of the help files.

NOTE: The location of these data files can be defined as being either in the data segment home directory (e.g., *DATA Segment HOME DIR/data* or in the web server home directory (e.g., */h/COE/Comp/WEBSv/data/DATA Segment DIR/data*).

For example:

```
NameTrans from="/SWHSW/HELP" fn="pfx2dir"  
dir="/h/ServerCOEWEBHelpDATA/data" )
```

This example, (which is taken from the sample ServerCOEWEBHelpDATA segment) uses the first location definition.

- Step 5: Once the data segment has been de-installed from a Web server machine, you will need to remove the URL map entry that was added to the web server's *obj.conf* file. If you are automatically adding this entry to your web server's *obj.conf* file using the [Community] descriptor in the data segment's *SegInfo* file, you will need to include a corresponding [Comm.deinstall] descriptor as well. This will ensure that the URL map entry added by the [Community] descriptor is properly removed from the *obj.conf* file. However, if you are manually adding the URL map entry to the *obj.conf* file, you will need to manually remove this entry after the data segment has been de-installed.
- Step 6: Finish developing the data segment and use the appropriate DII COE development tools to place your data segment onto an installation media.

3.1.2 The Software Segment

Before a specific mission application can access server-based Web help documents, three things must occur:

- 1) The mission application must be made aware of the location of the associated Web help files on a Web server.
- 2) The mission application must be modified to launch the DII COE Web browser and access these files.
- 3) The mission application must be segmented in accordance with the I&RTS.

3.1.2.1 Help File Location

For the server-based Web help, help files will be “logically” located in a Web server's */data* sub-directory (as opposed to the */data* directory of the software segment that accesses these files). Therefore, the logical location for these help files can be defined as:

Web Server Segment HOME DIR/data/Data Segment directory name/data

For example: */h/COE/Comp/WEBSv/data/COEWEBHelpDATA/data*

All mission application help files are accessed via a web server. Therefore, a URL must be established for each mission application Web Help home page. As result, the following defines the URL format to be used to access all server-based Web Help documents:

http://web server name/mission app prefix/HELP/mission app help home page

where

- *web server name* is the name of the web server hosting the help files.
- *mission app prefix* is the prefix of the software segment associated with the mission application that accesses these help files.
- *mission app help home page* is the file name of the home page for your mission application's help information

NOTE: The web server's configuration must be modified to provide access to your help files. This involves adding a URL map entry for your mission applications Web help home page to the web server's *obj.conf* file. The format of this entry is described in Subsection 3.1.1.

3.1.2.2 Launching a Browser and Accessing Help Files

For users of your mission application to obtain access to associated server-based web help documents, you will need to do the following:

Step 1: Make your application aware of the location of your web server. If your application is to use server-based web help, then it must know the location of the web server that is hosting your application's help files.

A number of methods can be used to implement this. However, it is recommended, where possible, that a configuration file containing the web server's location be used to communicate this information to your application. Using this method, if your web files need to be relocated to a different web server, only the configuration file needs modification. This configuration file should be created during the installation of your application's segment and should contain the name of the web server entered at the time of installation.

A simple method to implement a web server location configuration file is as follows:

- a) Design your PostInstall so that it prompts the installer for the name of the web server hosting your application's help files. Once the name has been entered, PostInstall should create a plain text file containing only this name in the same sub-directory where your mission application's executables are located.
- b) Design/modify your application so that calls to display your Web help files first access the plain text file containing the name of the web server.

- c) Once reading the name of the web server, your application should then construct the appropriately formatted server-based URL using this name as the *web server name*.

This method has been used in the ServerCOEWEBHelpSW segment. See the *PostInstall* file in */SegDescrip* and the *SWHSW_COEWEBSampleApp* and *SWHSW_call_COEWEBHelp* files in the */bin* sub-directories of this segment for further information.

Step 2: Establish an interface to help information via a button or menu item.

Step 3: Associate the help button or menu item with a call to the web browser. This call should contain the “http://” URL of the home page of the associated help documents. In addition, the call to the browser should take into consideration whether or not an existing Netscape process is running and launch Netscape accordingly. This is important because the Netscape application may lock and other errors can occur when attempting to run more than one Netscape executable at a time. A way to handle this has been illustrated in the *SWHSW_call_COEWEBHelp* routine in the ServerCOEHelpSW segment. This routine uses a command similar to the following to invoke the web browser:

```
<Segment HOME DIR for Web Browser>/BIN/Netscape -remote  
"openURL(<URL>, new())" || ( <Segment HOME DIR for Web  
Browser>/BIN/Netscape <URL> & )
```

where

- The “remote” option executes a command using an existing Netscape process.
- The “new()” option brings up a new Netscape window.
- The “openURL” directive instructs Netscape to open particular document specified by *<URL>*.
- *<URL>* is the URL for the home page of the web help documentation for your mission application. For a server-based web help document, the URL would be as follows:

http://web server name/mission app prefix/HELP/mission app help home page

where

- *web server name* is the name of the web server hosting the help files.
- *mission app prefix* is the prefix of the software segment associated with the mission application that accesses these help files.

- *mission app help home page* is the file name of the home page of your mission application's help information.

For example:

```
[~korn shell example] /h/COE/Comp/WEBBr/BIN/Netscape -remote  
"openURL('http://rigel.lab.saic.com/SWHSW/HELP/COEWEBHelp.html',  
new())" || (/h/COE/Comp/WEBBr/BIN/Netscape  
'http://rigel.lab.saic.com/SWHSW/HELP/COEWEBHelp.html'
```

When this korn shell command is invoked, the “||” symbol is used to determine which call to Netscape should be executed: If Netscape is already running, the call to Netscape that appears before the “||” symbol is used to bring up a new Netscape window containing the Web Help home page information. However, if Netscape is not running at the time the command is invoked, the call to Netscape that appears after the “||” is used to launch Netscape.

- Step 4: Finish developing your software segment, then use the appropriate DII COE development tools to place your segment onto an installation media.

3.2 Installation

After developing your data and software segments, install them on a DII COE platform (see *Installation Procedures* delivered with the ServerCOEWEBHelpSW segment, V1.0.0.1). Since, in the case of server-based COE Web Help, Web help documents are to be hosted by a web server, data segments containing these documents must reside on the same machine as the Web server. Therefore, it is important to note the following when installing server-based COE Web Help data segments:

- C A Web server must be installed before installing your ServerCOEWEBHelpDATA segment.
- C The ServerCOEWEBHelpDATA segment must be installed on the same machine as this web server.
- C Installation of the ServerCOEWEBHelpDATA and ServerCOEWEBHelpSW segments may occur in any order.
- C The ServerCOEWEBHelpSW segment may be installed on any machine that can access to the web server hosting its help documents.

Once you've installed your data segments, you will notice that the COEInstaller has logically placed your web help data file(s) in the *Web Server HOME DIR/data/Server Data Segment directory name/data* sub-directory.

For example:

/h/COE/Comp/WEBSv/data/ServerCOEWEBHelpDATA/data

Where the lowest level */data* sub-directory is a symbolic link to *Data Segment directory name/data* (e.g., */h/ServerCOEWEBHelpDATA/data*).

NOTE: Since access to your help files will be provided via URL, the location of your data files should be used for informational purposes only.

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